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THALIA MARAVARA AND THE RIGID AIR-BLOSSOM

Notes on some species of *Acampe* (Orchidaceae)

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Hendrick Adriaan van Rheede tot Draakestein had prepared the 12th volume of his "Hortus Indicus Malabaricus" before he died in 1691, but possibly the century had turned before his drawing of *Thalia Maravara* was published as the first representative of the later described genus *Acampe* Lindley. See Plate 8. To trace the history of this plant (Rheede 1703: t.4) with all — or at least some — of its ramifications through 250 years, one must enter into the dense jungle of orchid taxonomy and nomenclature with all the dangers of getting on the wrong trail or being completely lost. In the case of *Thalia Maravara*, we are today still not in the clear, for the name *Acampe praemorsa* (Roxb.) Blatt. & McCann, under which it is usually known, is nomenclaturally illegitimate and taxonomically uncertain.

In the hothouses of the Botanical Gardens of Copenhagen, for many years we have grown several large plants which I collected in Thailand, and which in "Orchids of Thailand" (Seidenfaden & Smitinand 1965: 703, Fig. 523) we called *Acampe longifolia* Lindl. Some years ago, P. F. Hunt (1970: 98) categorically stated that the correct name for Lindley's *Acampe longifolia* was *A. rigida* (Buch.-Ham. ex Smith) P. F. Hunt, and its distribution is limited to Thailand and the Malayan Peninsula, while *Acampe multiflora* (Lindl.) Lindl., with which it had often been confused is found to the west of Thailand in the Himalayas and adjacent parts of India. I was intrigued by this statement because the

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type-specimen of *A. rigida* must be a Nepalese plant, and the type-specimen of Lindley's *Vanda multiflora* Lindl., of which Lindley considered *Aerides rigida* Buch.-Ham. ex Smith a synonym, clearly was a plant from the Far East, originating in China. Earlier, Senghas (1964: 165), when uniting a series of African taxa under *Acampe pachyglossa* Rchb.f., remarked that he could not see any differences in the flowers of the African plants and those from Sikkim which he also called *Acampe longifolia*.

Consequently, when revising the treatment of *Acampe* in "Orchids of Thailand", I felt it necessary to investigate this problem more deeply. This led me not only far away from Thailand, but into an area with insufficient material for study.

As stated above, volume 12 of "Hortus Indicus Malabaricus" was prepared for printing before Rheede died. The effective publication, however, took place only in 1703, according to the title page. Commelin in his "Flora Malabarica", the preface of which is dated December 1696 (Warner 1920: 292), has already cited all the plates of Rheede, including those in volume 12. Also, Rudbeck in his "Campi Elysii, liber secundus", published in 1701 (p. 222, Fig. VIII), cited Rheede's figure under the polynomial "*Orchis abortiva flor: luteis minoribus, radiis rubris O.R.*".

I believe Linné was the first to complicate matters. In his second edition of "Species Plantarum" (1763: 1348), he based his *Epidendrum fulvum* on Rumphius's figure of *Angraecum octavum & fulvum* (Rumphius 1750, Vol. 6: t. 46, Fig. 1), but he wrongly included Rheede's figure of *Thalia*. The error was obvious and was soon rectified. I have not followed that trail since it leads to another problem surrounding *Vanda Roxburghii* and its allies.

In 1795, Roxburgh identified one of his Coromandel plants with Rheede's *Thalia Maravara* and applying the Linnean binominal system, called it *Epidendrum praemorsum* Roxb. (Corom. Pl. 1,2: 34, t.43, 1795). Comparing the pictures and considering the habitat, I see no reason to doubt Roxburgh's judgment and his epithet must, therefore, be associated with *Thalia Maravara*. We need only to note in passing that Swartz (1799: 75) called the plant *Cymbidium praemorsum* (Roxb.) Sw., which name was maintained until 1818, when J. E. Smith (Rees Cycl. 39, 1819), transferred it to *Aerides* with a new name:

Aerides undulata J. E. Smith, because of an earlier *Aerides praemorsa* by Willdenow (1805: 103).

Keeping the chronology, we must now introduce a new plant listed by J. E. Smith in Rees's Cyclopaedia side by side with *Aerides undulata*, namely "The Rigid Air-Blossom", *Aerides rigida* Buch.-Ham. ex Smith. It is clear from his notes that Smith had not seen actual specimens of this plant, but based his description on a drawing of a Nepalese plant by Buchanan. This drawing is known to exist in three copies, one of which is found in the India Office in London and is completely colored, while the other two in the British Museum and in the Linnean Society are only partly colored. They are otherwise identical and all three lack details of the flower. According to Miss Phyllis Edwards in the British Museum, their copy belongs to a set provided by Buchanan for Dr. John Fleming. There is no doubt, however, that the copy in the Linnean Society was the one upon which J.E. Smith based his description of *Aerides rigida*. With the kind permission of the Council of the Linnean Society this drawing is reproduced here on a smaller scale. See Plate 9. It is labelled "*Epidendrum rigidum* B.", the "B" indicating Buchanan; the other copies have the locality "Nepaul" added.

A difficulty with *Aerides rigida* is that no corroborating specimen seems to exist which could be considered as the holotype, and therefore, we have to rely on the above-mentioned drawing which is unsatisfactory because of the lack of floral details. The only relevant material I have come upon is a specimen in the Wallich herbarium at Kew, No. 7325, collected by Buchanan-Hamilton on August 21, 1808, in Gulapore called by him *Cymbidium praemorsum*, Swartz's old name for *Thalia Maravara*. The complication here is that Lindley in Wallich's Catalogue listed No. 7325 as *Vanda multiflora*. Although Lindley does not cite this number in his "Genera and Species of Orchidaceous Plants" (1833: 216), this collection must be the one he referred to when he added "Napalia, Hamilton, Wallich" to the habitat of *Vanda multiflora*, the type of which, however, came from China. At the same place Lindley lists as a synonym "*Aerides rigidum* Smith! in Rees Suppl.". The exclamation mark can only indicate that at the time he considered Wallich 7325 to be identical with it. He did not draw the natural consequence of this by renaming the Chinese plant *Vanda rigida* as he should have done. Actually, Wallich 7325 could well be consid-

ered an isotype specimen of *Aerides rigida*, even if we, as explained above, undoubtedly must consider Buchanan-Hamilton's drawings as the holotype.

It might be noted here that my Harvard colleague, Dr. Garay, located in the British Museum another drawing representing an *Acampe*, labelled "Dr. Hamilton" and numbered 397 which has a series of names by different hands: "*A. striatum* Wall. (Epidendr. Hamilton)", "*Aerides praemorsum?*", "*Vanda sp.?*", and "*?Saccolabium papillosum*". I believe this drawing also represents the Rigid Air-Blossom, *Aerides rigida*.

When considering *Vanda multiflora* described and illustrated by Lindley in his "Collectanea Botanica" t. 38, January 1826, we get to a critical phase of the history. The plant in question, which was said to come from China, flowered in Mr. Cattley's conservatory in July 1822, and Lindley had a drawing made of it. Dr. Garay sent me a photograph of the original engraving for the plate t.38, which is in the British Museum, pointing out that the engraved name on the drawing is *Sarcanthus praemorsus* (Roxb.) Lindl.

This particular combination was first used in print by Lindley in the tenth edition of James Donn's "Hortus Cantabrigiensis", published in March 1823. It was entered as a *nomen nudum* and stated that the plants had been introduced from China in 1800. This must be the same specimen as mentioned in the ninth edition (1819) of "Hortus Cantabrigiensis" under the name *Cymbidium praemorsum* (with a reference to Roxburgh's plate in Coromandel) even if that one was said to have been introduced from "E. Indies" also in 1800. It is clear that Lindley in 1822 and 1823 believed that the Chinese plant was *Thalia Maravara*. In August 1824 (Bot. Reg. 10, sub t.817) Lindley gave a generic description of the new genus *Sarcanthus*, which he typified by *Cymbidium praemorsum* (Roxb.) Willd., i.e., *Thalia Maravara*.

Before the publication of Plates 38 and 39 of "Collectanea Botanica" in January 1826, Lindley had changed his mind on two highly important points.

First, he decided that the drawing of the plant from Mr. Cattley's garden was not *Thalia Maravara*, and he had the name *Sarcanthus praemorsus* erased from the copper plate and substituted the name *Vanda multiflora*. In the Ames Orchid Herbarium copy of "Collectanea Botanica" the weak outline of the

older text can still be seen; in our copy in Copenhagen it has been completely removed. At the same time the title *Vanda multiflora* is engraved in a different handwriting from the one in the Harvard copy. What is behind this little mystery I have not tried to solve, as it seems irrelevant. In the 11th edition (1826) of "Hortus Cantabrigiensis" the entry, *Vanda multiflora*, has been substituted for the previous *Sarcanthus praemorsus* with a reference to "Coll. Bot. t.38", and with the old source "China 1800".

Secondly, Lindley in "Collectanea Botanica" in 1826 gave up the idea of maintaining his *Sarcanthus* of 1824 typified by *Epidendrum praemorsum*, but proposed it anew and typified it by *Sarcanthus rostratus* Lindl., a very different looking plant from China.

All this was drawn to our attention by Dr. Garay (1972: 199) who points out that the consequence is that — while *Sarcanthus* Lindl. 1826 (quite apart from being a later homonym, and hence illegitimate) is a later synonym for *Cleisostoma* Bl. — *Sarcanthus* Lindl. 1824 was legitimately published and therefore takes priority over *Acampe* Lindl. from 1853. Consequently, if the generic name *Acampe* is not conserved, the correct name today for *Thalia Maravara* must be *Sarcanthus praemorsus* (Roxb.) Lindl., and all other *Acampe* names must be changed in like manner.*

Reconsidering *Vanda multiflora*, we are in the same predicament as in the case of *Aerides rigida*; namely, we cannot establish with certainty if a type-specimen still exists. Lindley does not tell us what happened to Mr. Cattley's plant or who brought it to him. When, a few years later, in 1833, he lists *Vanda multiflora* in his "Genera and Species of Orchidaceous Plants", Lindley simply says "China". When transferring it to *Acampe* in 1853, however, he mentions two collectors, Reeves and Champion, without any reference to Mr. Cattley. What is more important, however, is that he has omitted the distribution "Napalia". See below.

According to Breitschneider (1898: 251) John Reeves Senior resided in Canton between 1812 and 1831. Although he mostly

*Since these lines were written, I have proposed the genus *Acampe* for conservation (Taxon 24: 389, 1975) and it has been approved by the committee. Thus, the name should be used until the final decision will be reached during the next International Botanical Congress.

sent living plants to the Horticultural Society in London, we cannot exclude the possibility of his supplying plants of *Vanda multiflora* to Mr. Cattley in 1821 or 1822, particularly since we know from Lindley (Coll. Bot. sub t. 39B) that *Sarcanthus rostratus*, imported in 1821 by the Horticultural Society also ended up in Mr. Cattley's garden. I was, however, not able to find any material in the herbaria bearing his name. On the other hand, Dr. Garay sent me a photograph of a nicely executed drawing from the collection in the British Museum made by Chinese artists under Reeves's supervision. This drawing carried the usual crest of Mr. Reeves and the name "Golden Orchid" in Chinese letters, as well as in faint pencil "*Vanda multif.*". It is reasonable to believe that this drawing was the basis for Lindley's entry of Reeves in 1853, but the drawing itself could not have been the basis for his original description in 1826, since it does not show the minute details mentioned there. The picture gives us no clue to the origin and whereabouts of the type-specimen. Mrs. Hu (1972: 41) informs us that Reeves's plant came from Kwangtung, but she based her opinion on the information given by Breitschneider.

Since Champion collected in Hongkong between 1847 and 1850, he could not have supplied the type-material. There is one problematic sheet in the Lindley Herbarium labelled *Acampe multiflora* on which is found a small piece of an inflorescence with two flowers flanked by loose leaves. The left leaf is attached to the paper by a small label inscribed "*Vanda multiflora* Hongkong 528" and beside it is written "Major Champion". Considering the old practice of gluing specimens of different origin on the same herbarium sheet, the possibility cannot be excluded that the right leaf and perhaps the inflorescence come from the Cattley material. Prior to 1830, Lindley did not annotate his material carefully. Should one consider not to regard the plate in "Collectanea Botanica" to be the type, then the sheet in the Lindley Herbarium must be chosen as the lectotype, since it was identified and cited by Lindley.

The next binomial chronologically is *Saccolabium papillosum* Lindl. (18: t. 1552, Jan. 1, 1833). Having decided that the Cattley plant was not *Thalia Maravara*, Lindley described it again on the basis of a collection by Wallich (No. 7305) from Prome in Burma. Under the description he included in synonymy *Epidendrum praemorsum* Roxb. as well as *Thalia Maravara*. When

moving Rheede's plant to *Saccolabium*, Lindley should have made the combination *Saccolabium praemorsum*, but he did not due to its having been pre-empted in another manuscript of his already in press, which, however, did not appear until May 1833 (Gen. and Sp. Orch. Pl. pt. 10: 221). According to the International Code of Botanical Nomenclature Lindley's *Saccolabium papillosum* is illegitimate because at the time of publication the combination *Saccolabium praemorsum* was available. In transferring the epithet to *Acampe* in 1853, Lindley did not make things better for he still ignored *Epidendrum praemorsum* as a name-bringing synonym.

It may be noted parenthetically that Hooker (1890: 63) accepted *Saccolabium papillosum*, but excluded *Thalia Maravara* (for the latter he proposed the transfer *Saccolabium praemorsum* (Roxb.) Hook.f.), all in accordance with the then valid Kew Code.

Lindley in his "Genera and Species of Orchidaceous Plants" (p. 215) describes another *Vanda* species belonging to this complex, *Vanda longifolia* Lindl., which he based on a plant brought from Tavoy by Wallich. Here we are on safe ground because Lindley clearly indicates that his type-specimen is Wallich No. 7322, still kept in the Herbarium at Kew. *Vanda longifolia* has been maintained up until recently under the name of *Acampe longifolia* (Lindl.) Lindl., although with varying taxonomic content.

Some years later (Bot. Reg. 25: Misc. p. 61, 1839) *Vanda congesta* was added to this interrelated complex by Lindley based on a plant from Ceylon. When listing this taxon in his first enumeration of *Vanda* species (Paxt. Fl. Gard. 2: 21, April 1851) Lindley seems to have reached the opinion that the plant was identical with already discussed *Saccolabium papillosum* because he lists it as a synonym together with all previous synonyms given in 1833, instead of using the earliest available epithet from *Epidendrum praemorsum*.

Lindley, however, did not insist that in *Vanda congesta* he just had a new name for *Thalia Maravara*. In "Folia Orchidacea Acampe" he states that he had mixed up his specimens and that *Vanda congesta* is something different from *Saccolabium papillosum*. This opinion has been sustained by Hooker (1890: 63), although with some hesitancy regarding the circumscription of his transfer, *Saccolabium congestum* (Lindl.) Hook f.

When Lindley published his account of the genus *Acampe* in his "Folia Orchidacea", he described *A. dentata* as a new species. Apparently he overlooked his earlier described *Saccolabium ochraceum* Lindl. (Bot. Reg. 28: Misc. p. 2, 1842) for Hooker discovered them to be conspecific. In the genus *Acampe* the correct name is *A. ochracea* (Lindl.) Hochr.

Among Wight's Icones (1851) there are two representatives of the group. The first is No. 1670, called *Vanda Wightiana* Lindl. mss., which is based on a fruiting specimen in the Lindley Herbarium at Kew. Lindley transferred it to *Acampe Wightiana* (Lindl.) Lindl. (Fol. Orch. *Acampe* 2, 1853), but according to Blatter and McCann it is conspecific with *A. praemorsa*. Thus, in Wight's plate we have another illustration of *Thalia Maravara*. The second illustration is Wight's No. 1672, called *Saccolabium papillosum*, but Hooker believes it to be the same as *A. congesta* as was mentioned above.

When Lindley established the genus *Acampe* he undoubtedly coined the generic name after "The Rigid Air-Blossom" in using the Greek word *akampes*, meaning rigid. Reference has already been made to most of the taxa listed there. In addition to *Acampe dentata* mentioned above, the list contains two additional new taxa. One of them, *Acampe excavata* Lindl. is reduced by Hooker to a synonym of *Saccolabium praemorsum*, while *Acampe cephalotes* from Sylhet is maintained by him under *Saccolabium cephalotes* (Lindl.) Hook. f.

Reichenbach, in Walper's *Annales* 6: 872-874, 1864, reproduces verbatim Lindley's treatment from 1853. His *A. intermedia* from 1856 is of some interest because, as far as I can see, it is identical with what I have called *A. longifolia*; another of his species, *A. Griffithii* from 1872 appears to be referable to *A. ochracea*. In 1881, Reichenbach published *A. pachyglossa* and *A. Renschiana* from Africa. These were later followed by *A. madagascariensis* and *A. mombasensis* by Kraenzlin in 1891 and Rendle in 1895, respectively. The African species, including *A. nyassana* Schltr. from 1915 have been studied, as mentioned earlier, by Senghas (1964). They are of special interest because they seem to be so close to *A. longifolia* as to appear to be conspecific.

Several references have already been made to Hooker's outstanding work of *Flora of British India* in 1890. I wish to add at this point that Hooker seems inclined to combine Lindley's *A*

multiflora and *A. longifolia*, which also expressed my own feelings. While he does not discuss the problem in detail and limits himself to question marks, it is undoubtedly due to his most sensible wish to keep within British India and not spread out to China or Africa. We find in this field, as in the general field of taxonomic work in our area, that Hooker's big work marks the end of an era, for the following 80 years taxonomical works on the flora of the Asiatic mainland have been very meager both in size and in quality.

With this perspective in mind we may now turn to look at the actual plant material connected with *Thalia Maravara* and *Aerides rigida*. The main question is: are there any differences between the Himalayan plants called *Aerides rigida*, the Chinese plants called *Vanda multiflora*, and the Tenasserim plants called *Vanda longifolia*?

Needless to say, more detail on the identity of *Vanda multiflora* is necessary in addition to its early history already summarized above. There is no reason to doubt that the type-specimen came from China, be it from Mr. Reeves or some other traveller around 1820 or earlier, and unless some misplaced specimens are found, we have to declare Lindley's figure in "Collectanea Botanica" the holotype. Among the characteristics in the rather long original description we find one very essential distinguishing character of the lip: "*sacco intus glabro inappendiculato*". Several years later, in Paxton's Flower Garden (1851: 21) Lindley maintains that the plants occur both in China and Nepal, but adds a new description of the lip, "*basi linea media pilosa in calcar decurrente aucto*".

This chaotic changing becomes finally clarified in Lindley's treatment of *Acampe* (Fol. Orch. *Acampe*, 1853) when he states that *A. multiflora* has its occurrence limited to China (Reeves, Champion) while the description of the lip reads, "*Labello ovato acutiusculo, calcare vacuo*" which is a mere rewording of the original description. Lindley adds the following explanation: "I seem to have formerly confused with it specimens of *A. longifolia*, which differs from among other things in having a hairy raised line inside the sack of the lip". From this we learn that Lindley ended up by maintaining that Buchanan's plant from Nepal is not *Acampe multiflora*, and that in his opinion the lack of hairs and calli, "*calcare vacuo*", is the most important distinguishing character of the Chinese plant. The Nepalese plant, however, has disappeared.

To verify Lindley's observations I started to look for good material of the Chinese plants. There are very few collections and mostly they are without flowers. I found one of Hance's good specimens in the British Museum, and from Hongkong Dr. Lau sent me a fresh plant. In Singapore I obtained a flower from a Hainan plant. Champion's plant in Kew had two flowers left, strongly glued to the sheet for more than 100 years — I loosened one for dissection. As can be seen on Plate 10, all these flowers are very hairy on the lower part of the lip and have a longitudinal hairy keel running down in the sack, '*basi linear media pilosa in calcar decurrente aucto*'. Naturally, we cannot exclude the possibility that Mr. Cattley's plant with '*calcare vacuo*' is so rare that it has not turned up for more than 150 years, but I believe we are safe to conclude that the eastern *Acampe multiflora* does not differ from the Western plants in this important character. Moreover, I have not been able to see any other differences in the flowers.

The distribution of *Acampe longifolia*, of which the type-specimen is Wallich 7322 from Tavoy, has not been extended until Hooker (1890: 62) mentions that there is a picture of it from Sikkim in the Calcutta Herbarium; he also cites a collection from Upper Assam by Mann. Since 1890 several collections have been reported from the Himalayas through Thailand, Yunnan and Indochina to the Malayan Peninsula. Most of the older herbarium sheets have passed through many hands and they carry two, three or more annotations. The question is: are there differences in the flowers of these plants? Ridley, (1896: 358) who considers *Acampe longifolia* conspecific with *Vanda multiflora* (noting them both in Tenasserim, but not in the Himalayas or China), says that his *Acampe penangiana* differs in having no spur. Guillauman (1930: 336) does not link his new *Vanda viminea* from Indochina to any other species, but just declares that '*il est inconcevable qu'une Orchidée de cette taille. . . . soit nouvelle pour la science*', in which he is right indeed. Hunt (1972: 98) localizes *Acampe multiflora* in the Himalayas and limits *Acampe longifolia* to Thailand and the Malayan Peninsula, declaring it nevertheless a synonym of the Nepalese *Aerides rigida*. He emphatically states that *A. multiflora* is a distinct species.

Accordingly, I have studied flowers of plants from different places. I have had available the type-specimen of *Vanda longi-*

folia; Dr. Chang of Singapore kindly sent me type-material of *Vanda penangiana*; from Dr. Garay I got copies of Ridley's original drawings; from Paris I have studied material of *Vanda viminea*. Wallich 7325 which I believe, as stated above, could be considered an isotype of *Aerides rigida*, is unfortunately not accessible, but Mr. Taylor kindly sent me a good photograph of it from the Wallich Herbarium. Below in the list of localities I have indicated with an "!" are other specimens I have seen, including our own Thai material.

On Plate 11 I have assembled sketches of some of these flowers. I am not able to find any differences among the flowers sketched or among other flowers investigated for there are no separating characters. Some of my colleagues have suggested that there might be separating characters in the vegetative aspects, especially in the leaf tips that might be equally or unequally bilobed, etc. On Plate 12 are the outlines of the leaf tips of several plants from the different geographical areas. My conviction is that the variation is not sufficiently constant to be of specific significance. Dr. Garay pointed out that the Chinese plant is almost equal at the tip, whereas the western plants are decidedly unequal at the tip. It is true, as will be seen in the figure, that the little evidence we have from the single leaf of Champion 528 and the picture of the type of *Vanda multiflora* indicate almost equal tips, but the fresh material sent by Dr. Lau from Hongkong and the specimens collected there by Taam seem just as unequally bilobed as some of the western plants and vice versa. The same is true of the Hainan plants I saw recently in the Peking Herbarium.

Maybe when more material is available for study, we will be able to distinguish local forms, but for the time being I must consider all these plants as belonging to one species. This Asiatic case seems to be paralleled in Africa, where Dr. Senghas reduced all taxa to *Acampe pachyglossa*, admitting only two geographical subspecies, based on leaf characters. Incidentally, I find it highly probable that further studies will consider also *Acampe pachyglossa* as being conspecific with *Acampe rigida*, but I have not studied the African material.

Finally, it should also be mentioned that Dr. Garay sent me a copy of Reichenbach's drawing of *Acampe intermedia* Rchb.f. Reichenbach speaks in his diagnosis of "*foliis aequaliter bilobis*", but one of his sketches shows a very unequal leaf tip;

there are no leaves preserved with the type-material. Reichenbach suggests a possible hybrid between *A. multiflora* and *A. papillosa*. For the time being I consider this species as a probable synonym for *A. rigida*.

The following taxonomic presentation summarizes our knowledge of "The Rigid Air-Blossom":

- Acampe rigida** (Buch.-Ham. ex J.E. Sm.) P.F. Hunt in Kew Bull. 24: 98, 1970; Seidenfaden in Bull. Mus. Nat. Hist. Nat. Paris ser. 3, 71, Bot 5: 105, 1972 (1973); *ibid.* 1975: 4.
Basionym: *Aerides rigida* Buch.-Ham. ex J.E. Smith, in Rees, Cyclopaedia 39, 1819.
Syn.: *Vanda multiflora* Lindl., Coll. Bot. t. 38, January 1826; Lindl., Wall. Cat. No. 7325, 1832; Lindl., Gen. and Sp. Orch. Pl. 216, 1833; Lindl. in Paxt. Fl. Gard. 2: 21, 1851.
Vanda longifolia Lindl., Gen. and Sp. Orch. Pl. 215, 1833; Lindl. in Paxt. Fl. Gard. 2: 21, 1851.
Acampe multiflora (Lindl.) Lindl., Fol. Orch. Acampe 1, April 1853; Benth. in Hook. Journ. Bot. 7: 35, 1855; Rchb. f. in Walp. Ann. 6: 872, 1864; Rolfe in Journ. Linn. Soc. Bot. 36: 36, 1903; Dunn & Tutcher in Kew Bull. Add. ser. 10: 266, 1912; Schlechter in Fedde, Rep. Beih. 4: 295, 1919; Merrill & Metcalf in Lingnan Sci. Journ. 21: 5, 1945; Tang & Leung, Check List 59, 1967; Hu in Quart. Journ. Taiwan Mus. 24: 41, 1972.
Acampe longifolia (Lindl.) Lindl., Fol. Orch. Acampe 1, 1853; Rchb. f., in Walp. Ann. 6: 872, 1864; Holttum, Orch. Malaya ed. 2, 625, 1957; Seidenfaden & Smitinand, Orch. Thailand 4(2): 703, Fig. 523, 1965; Kerr in Nat. Hist. Bull. Siam Soc. 23: 210, 1969; Hara, Fl. E. Himalaya, 2nd Rep. 176, 1971; Rao & Balakrishnan in Bot. Surv. India 20: 204, 1973; Banerji & Thapa in Bomb. Nat. Hist. Soc. 70: 26, 1973.
?*Acampe intermedia* Rchb.f. in Allg. Gartenz. 24: 217, 1856; Hook. f., Fl. Brit. Ind. 6: 66, 1890.
?*Acampe pachyglossa* Rchb.f., Otia Bot. Hamb. 2: 76, 1881; Rchb.f. in Bot. Zeit. 49: 449, 1881; Senghas in Die Orchidee 15: 165, 1964.

- ?*Acampe Renschiana* Rchb.f., *Otia Bot. Hamb.* 2: 77, 1881; Finet in *Soc. Bot. Fr. Mem.* 9: 8, pl. 1, f. 7-12, 1907.
- Saccolabium longifolium* (Lindl.) Hook. f., *Fl. Brit. Ind.* 6: 62 & 197, 1890; Grant, *Orch. Burma* 281, 1895; King and Pantling in *Ann. Roy Bot. Gard. Calcutta* 8: 220, Pl. 202, 1898; Prain in *Rec. Bot. Surv. India* 2: 343, 1903; Bengal Plants 768, 1903; Gagnepain in *Fl. Gen. Indochine* 6: 502, 1934; Panigrahi & Joseph in *Bull. Bot. Surv. India* 8: 157, 1966.
- ?*Acampe madagascariensis* Krzl. in *Gard. Chron. ser. 3*, 10: 608, 1891; Perrier in *Humbert, Fl. Madag. Orch.* 2: 120, Fig. 55, 2, 1939.
- ?*Acampe mombasensis* Rendle in *Journ. Linn. Soc.* 30: 386, 1895.
- Acampe penangiana* Ridl. in *Journ. Linn. Soc.* 32: 358, 1896; in *Mater. Fl. Malay. Pen.* 1: 149, 1907; in *Journ. Str. Br. Roy. As. Soc.* 59: 197, 1911; *Fl. Malay. Pen.* 4: 155, 1924.
- ?*Acampe nyassana* Schltr., in *Engl. Bot. Jahrb.* 53: 594, 1915; Mansf. in *Fedde, Rep. Beih.* 58, t. 58, Nr. 380, 1932; Verdoorn in *Fl. Pl. Afr.* 30, Pl. 1175, 1954.
- Vanda viminea* Guill. in *Bull. Soc. Bot. Fr.* 77: 336, 1930; Gagnepain in *Fl. Gen. Indochine* 6: 525, 1934; Guillaumin in *Bull. Mus. Nat. Hist. Nat. Paris, ser. 2*, 34: 478, 1962.
- ?*Acampe pachyglossa* ssp. *Renschiana* (Rchb.f.) Senghas in *Die Orchidee* 15: 165, 1964.

DISTRIBUTION

Africa: EAST AFRICA FROM KENYA TO TRANSVAAL (*Acampe pachyglossa* ssp. *pachyglossa*, *fide* Senghas). MADAGASCAR, COMORO ISLANDS (*Acampe pachyglossa* ssp. *Renschiana*, *fide* Senghas); Aldabra RENVOIZE 02071 (K)! **India:** NEPAL; Gualpore Buchanan-Hamilton drawing (BM)! WALLICH 7325 (K)!; Khebang-Bharomedin *fide* Hara; Sibganja-Maharabahara *fide* Hara; "Common" *fide* Banerji & Thapa. Sikkim: PANTLING 250 (K)! BHUTAN; Tashigong, BALAKRISHNAN 41293, *fide* Rao & Balakrishnan. SUNDRI-BUNS; Supoti, HAINIG, *fide* Prain; "Calcutta" imported by Schiller, Herb. Reichenbach 45173, type of *Acampe intermedia*. NEFA: Tirap, *fide* Panigrahi & Joseph. ASSAM; Upper Assam, MANN 3 (K,W)! **Burma:** Myitkyina, SWINHOE 66 (K)!; Tavoy, WALLICH 7322 (K)!, type of *Vanda longifolia*.

Thailand: I; Muang Fang, KERR 263 (K)!, GT 204 (C)!, GT 462 (C)!; Mae Tang, Chiangmai, KERR 02 (K, BKK, C)!, Cumb. 1165 (C)!, Chiengdao, GT 194 (C)! II; Phu Phan, GT 4477 (C)! not yet flowered, GT 5730 (C)! VI; Sisawat 800m, GT 4256 (C)! VII; Koh Tao, KERR 0645 (K)!; Terutao, CURTIS *s.n.* *fide* Ridley. **Laos:** Col Den Din, Louang Prabang, GT 974 (C)!; Sayaboury, KERR 0323; Vientiane, SIGALDI 307 (P)! KERR 0970; Phonthane, Khammouane, SPIRE 189 (P)!; Ka Khe, Savannakhet, HARMAND 427 (P)!; Mouang Pren, POILANE 1916, *fide* Guillaumin. **Cambodia:** Stung Treng, COUDERC, *s.n.* *fide* Guillaumin. **Vietnam:** Cana, EVRARD *s.n.*, *fide* Gagnepain; Bien Hoa, PIERRE 6560, *fide* Guillaumin (this one or one of the following is the type of *Vanda viminea*) Phanrang, Capia, POILANE 8573, *fide* Guillaumin; Tonkin, BON 3219, *fide* Guillaumin; Tankeuin, BALANSA 314, *fide* Guillaumin; Ocach, BON 2329, *fide* Guillaumin; Kien Khe, BON 2733, *fide* Guillaumin; Dalat, TIXIER 1/59, *fide* Guillaumin; Hanoi, SIMOND *s.n.* drawing No. 4 (P)!, questionable. **China:** *sine loc.*, Mr. Cattley's conservatory, Lindley's drawing (BM)!, type of *Vanda multiflora*; FABER 15 (W)!, sterile. Yunnan: Houang Tsao Pa, CAVALERIE 4603 (K)!, fruiting; Southern Yunnan; living, Canton Bot. Gard., GT 8144 (C)!; *sine loc.*, HENRY 13613 (K)!, fruiting; Cheli, WANG 75647, 76342, 77947 (PE)! Kwangtung; REEVES, drawing (BM)!; Ting Wu Mts., METCALF 17034 (K)!; Ng Tung Shan, TSUI 256 (K)!. Hongkong; CHAMPION 528 (K, HK)!, HANCE 1334 (BM)!, LAMONT 764 (BM)!, HU 7352 (K)!, sterile; Lantao Isl; *fide* Dunn & Tutcher; New Territories, *fide* Dunn & Tutcher; Aberdeen, TAAM 1986 (H)!; Cape d'Aguilar, LAU 2024 (C)! Hainan; Pak Chik Ling, LEI 946 (K, SING, PE)! *sine loc.* CHUN & TSO 43815 (PE)! *fide* Merrill & Metcalf. Kwangsi; *sine loc.*, *fide* Merrill & Metcalf. **Malaya:** Government Hill, Penang, CURTIS 1963 (SING, K)!, type of *Acampe penangiana*; Langkawi, WILLIAMS *s.n.*, *fide* Ridley; Pulau Chupa, Langkawi, CORNER *s.n.* (K)!

A logical end to this paper would be to prepare a similar synthesis for *Thalia Maravara*. A considerable part of this work has already been done by Blatter and McCann (1932: 495). It seems that Rheede's old plant is not present in Thailand for its main distribution is Southern India. I, therefore, prefer to leave further studies to my colleagues engaged in research in that region.

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PLATE 8

Pars XII Tab 4

Thalia Maravara L.

80837 Malab

1502904

Thalia *Brom.*

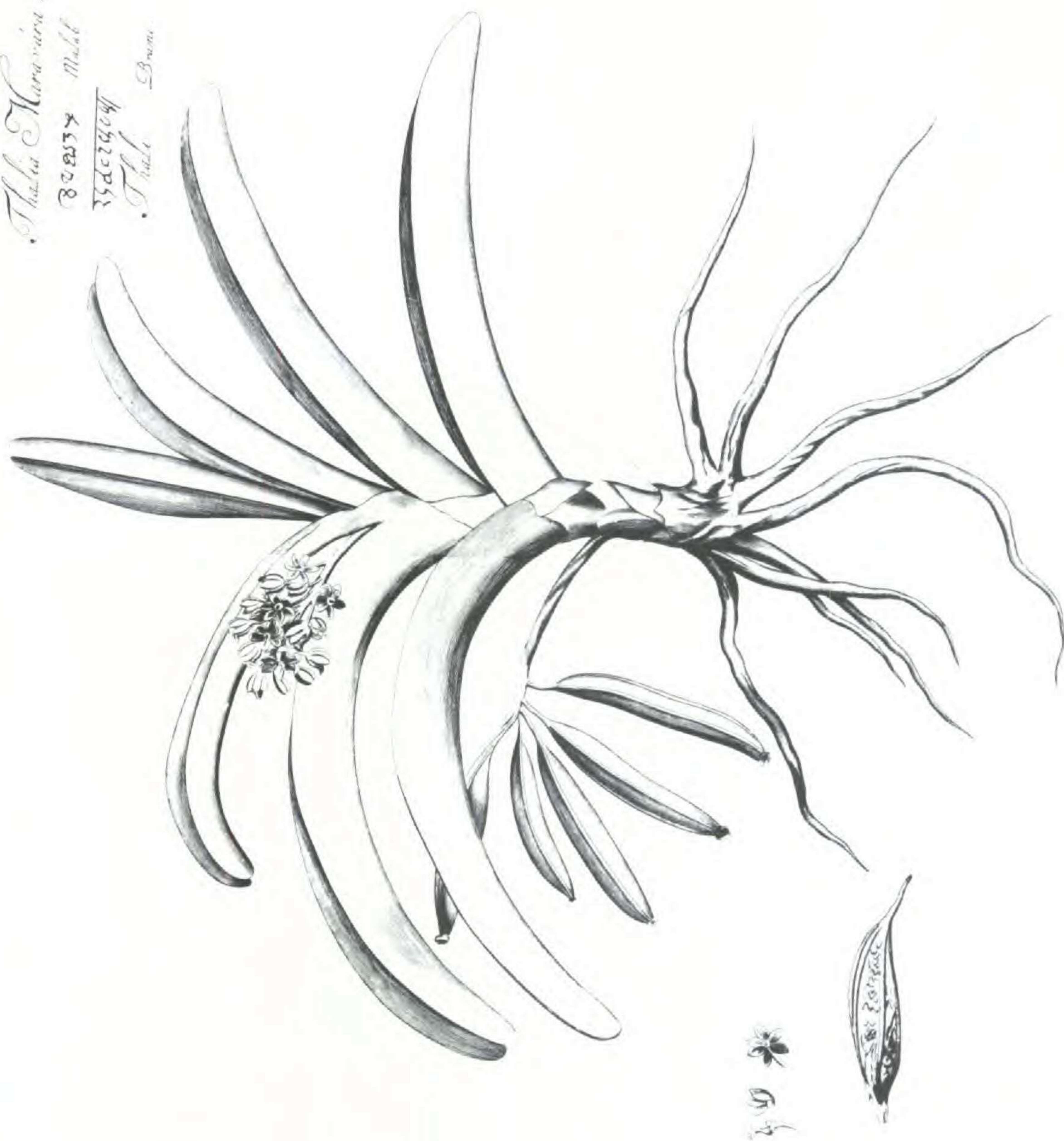


Plate 8. *Thalia Maravara*, now called *Acampe praemorsa* (Roxb.) Blatt & McCann, reproduced from Rheede, Hortus Indicus Malabaricus 12: t. 4, 1703. Much reduced in size.

PLATE 9



Plate 9. The Rigid Air-Blossom, i.e., *Acampe rigida* (Buch.-Ham. ex J. E. Sm.) P. F. Hunt. The Buchanan-Hamilton drawing of the holotype from the Archives of the Linnean Society of London.

PLATE 10

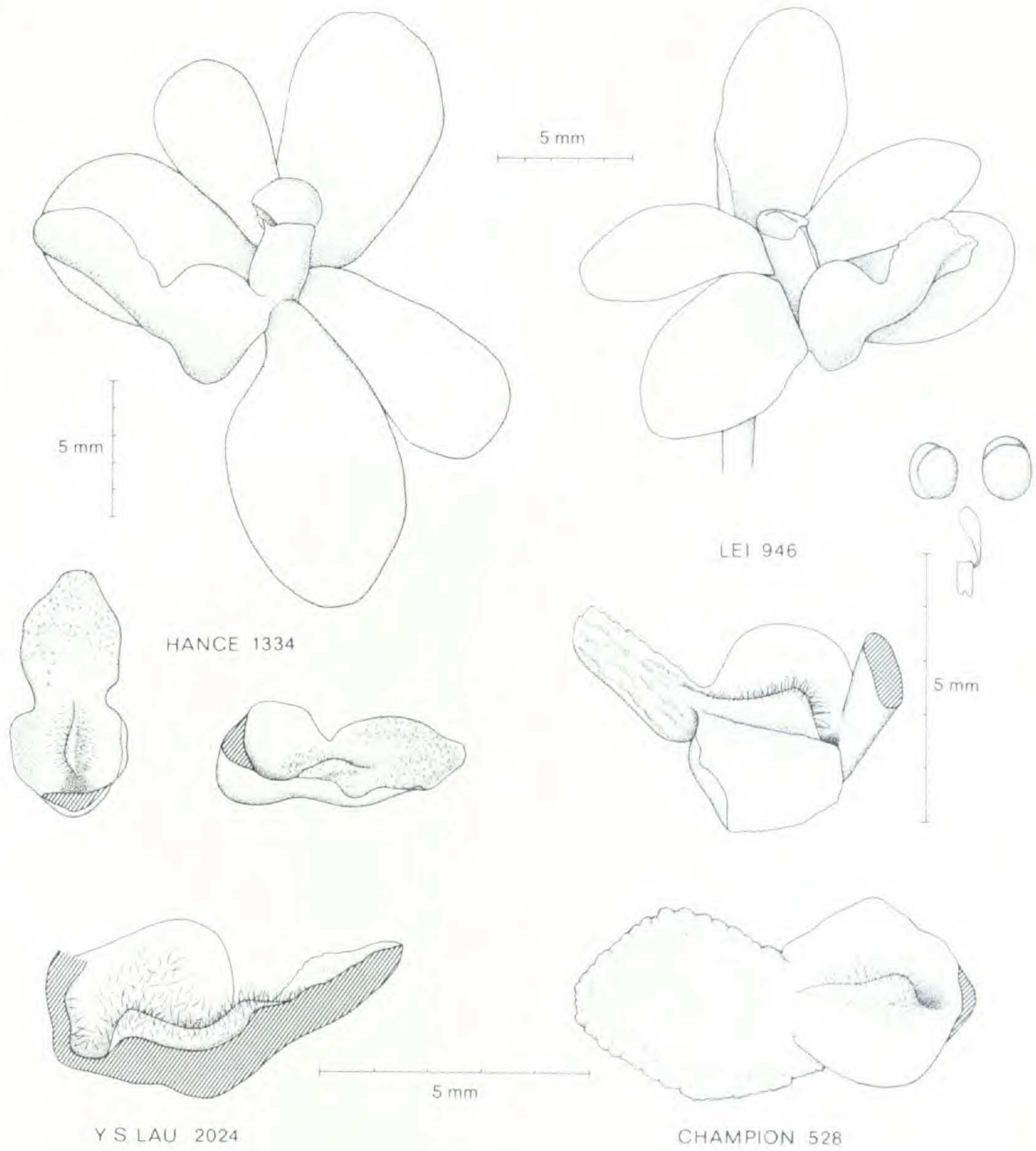


Plate 10. *Acampe rigida* (Buch.-Ham. ex J. E. Sm.) P. F. Hunt. Flowers, lips and pollinia from various Chinese specimens.

PLATE 11

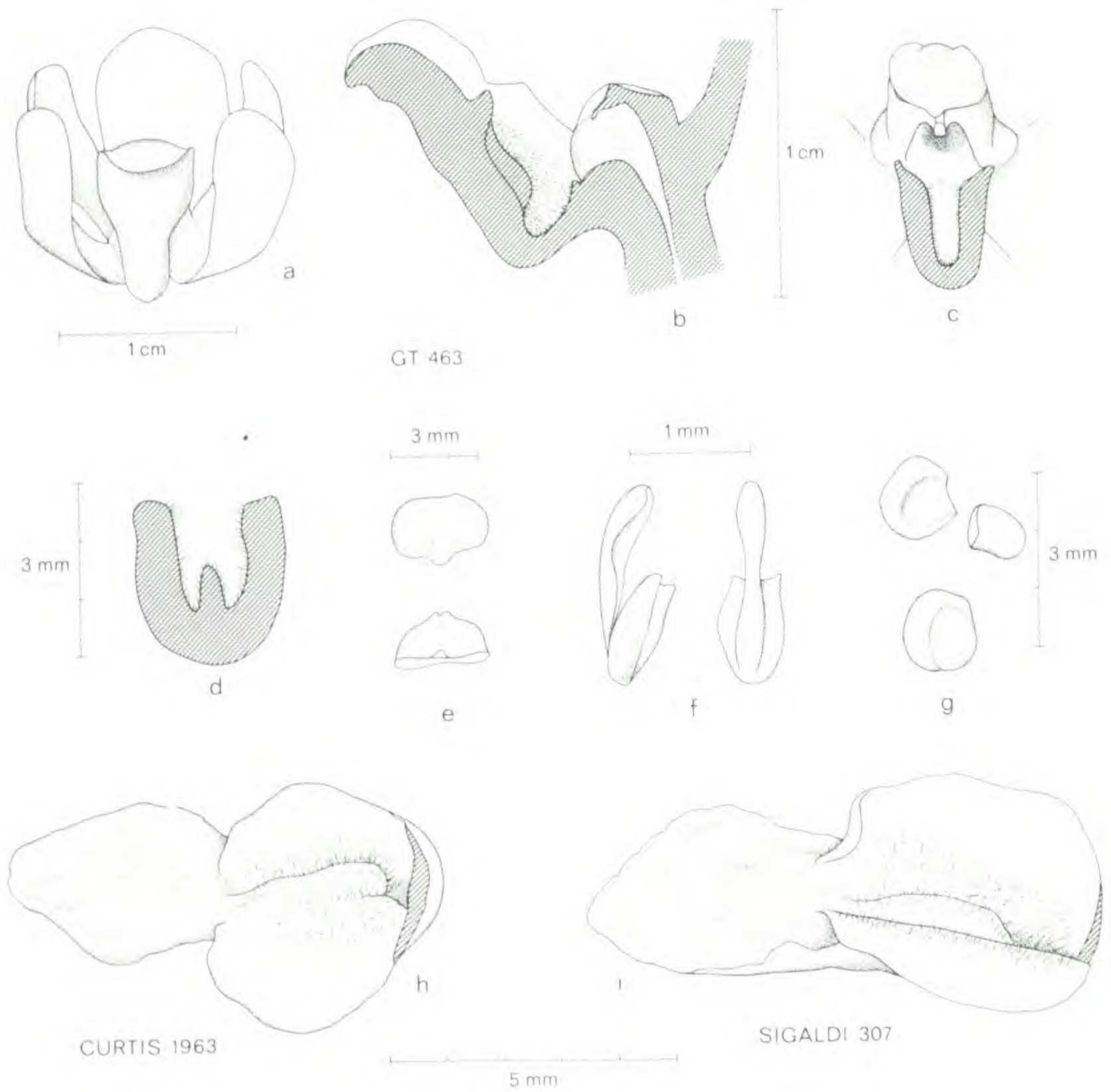


Plate 11. *Acampe rigida* (Buch.-Ham. ex J. E. Sm.) P. F. Hunt. Floral details: a-g — material from Thailand; a. flower, b. longitudinal section of column and lip, c. column from front showing sectioned spur of lip, d. cross section of basal part of lip, e. anther or operculum, f. stipes and gland of pollinia, g. pollinia; h. *Acampe penangiana* Ridl., lip from type specimen, i. lip from a Laotian specimen.

PLATE 12

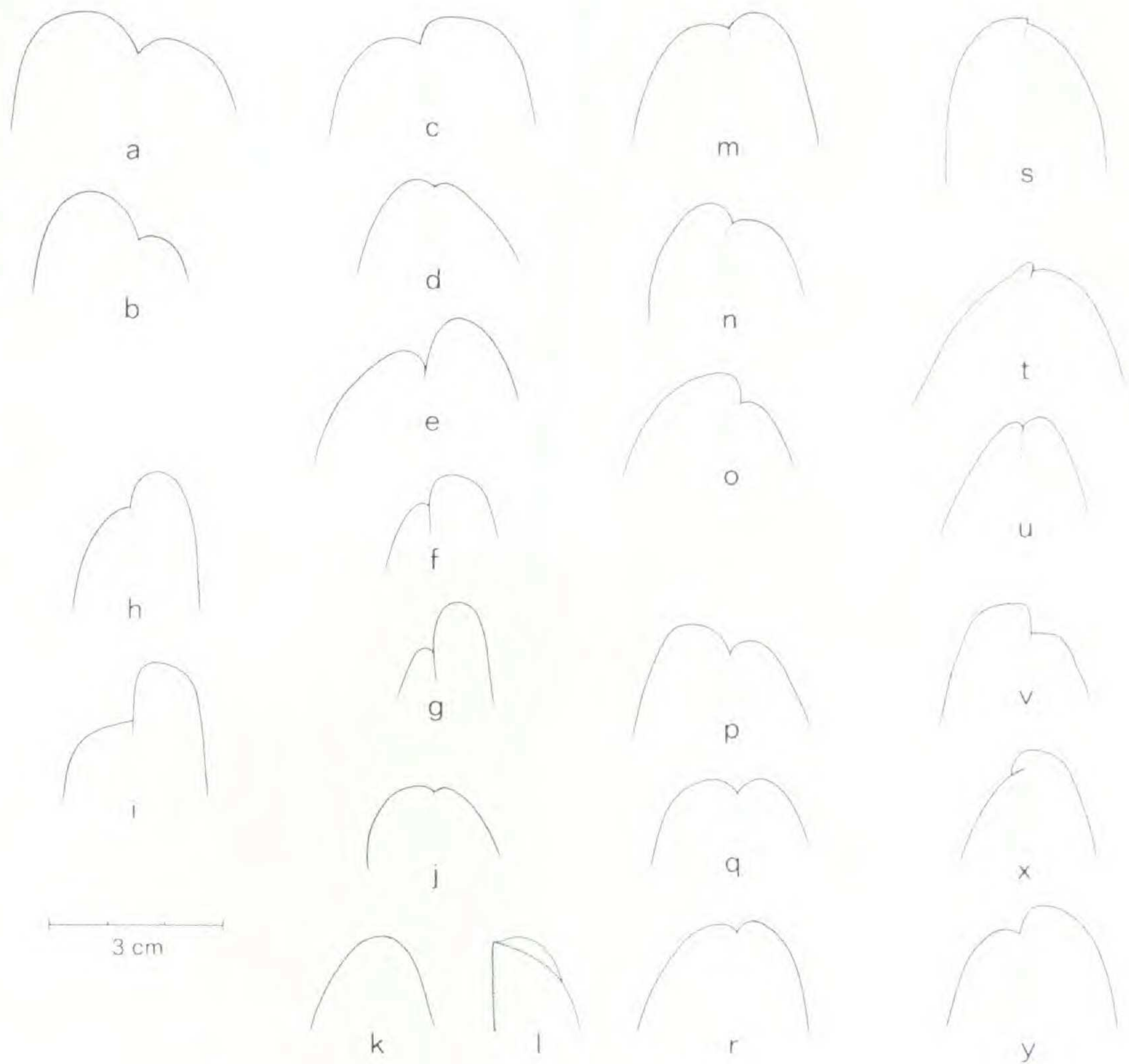


Plate 12. *Acampe rigida* (Buch.-Ham. ex J. E. Sm.) P. F. Hunt. Outline of leaf-tips from different areas: a-b. Nepal (Wallich 7325), c-g Sikkim (Pantling 250), h-i. Tavoy (Wallich 7322), j-l. Malaya (after specimens from Langkawi and Penang in Herbarium in Singapore, sketched by Dr. Chang), m. Laos (Poilane 1916), n,o. Vietnam (Poilane 6560 & 8573 in Paris, sketched by Dr. Hallé), p-r. Thailand (Kerr 02 & Curtis *s.n.*), s-y. China (Champion 528) (s), Lindley's t.38 in *Collectanea Botanica* (t-u), and Lau 2024 (v-y).